

REMARKS

By this amendment, claim 5 has been amended, and claim 10 has been added. Thus, claims 5-10 are now active in the application. Reexamination and reconsideration of the application are respectfully requested.

In items 1-9 on pages 2-5 of the Office Action, claims 5, 6 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Oshima et al. (U.S. 5,816,783) in view of Leu et al. (U.S. 2004/0131489); claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Oshima et al. in view of Leu et al. and Musso et al. (U.S. 6,695,973); and claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Oshima et al. in view of Leu et al. and Hayashi et al. (U.S. 5,506,486). These rejections are believed clearly inapplicable to the claims as now presented, for the following reasons.

In item 3 on pages 2 and 3 of the Office Action, and in particular, in the last two sentences of item 3, the Examiner explained the manner in which the claim language of claim 5 is being broadly interpreted to read upon a combination of Oshima et al. and Leu et al. In particular, the Examiner interpreted the claim language:

“wherein a center of gravity of said balancing weight is located at a position substantially opposite to said eccentric section axis with respect to said main shaft axis but deviated, in a rotating direction of said main shaft, from a location exactly opposite to said eccentric section axis with respect to said main shaft,”

so as to read upon the two-piston arrangement of Leu et al. because “as a line connecting the shaft axis and eccentric axis rotates with the shaft [in Leu et al.], it would also rotate to the balancing weight piston, ... **during at least portions of the cycle**, there would be provided a counterweight in a location deviated in a rotating direction from a location exactly opposite the eccentric section” (emphasis added).

In order to obviate this broad reading of the claim 5 language upon the combination of Oshima et al. and Leu et al., and with exemplary reference to the present drawing figures, claim 5 has been amended to specify that the crankshaft 107, the piston 117, and the balancing weight 108 are arranged such that, **throughout reciprocation of the piston** 117 in the cylinder 114, a center of

gravity of the balancing weight 108 is **always** located at a position substantially opposite to the eccentric section axis 110' with respect to the main shaft axis 113 but deviated, in a rotating direction of the main shaft 109, from a location exactly opposite to the eccentric section axis 110' with respect to the main shaft axis 113.

Thus, as apparently recognized by the Examiner, the Leu et al. dual-piston configuration does not, during reciprocation of the piston(s) always have a center of gravity of the “balancing weight” (i.e. the second piston of Leu et al.) located at a position substantially opposite to the eccentric section axis with respect to the main shaft axis but deviated, in a rotating direction of the main shaft, from a location exactly opposite to the eccentric section axis with respect to the main shaft axis, as now explicitly required by claim 5.

That is, the pistons and crankshafts of Leu et al. move or rotate during the operation thereof, and in particular, paragraph [0051] of Leu et al. describes that:

“As shown in FIGS. 7 and 8, the pump 30 can operate as a parallel pressure or parallel vacuum pump in which the pistons reciprocate 180 degrees out of phase. FIG. 5 shows piston 90 at top dead center while piston 91 is at bottom dead center. FIG. 6 shows the pistons when the drive shaft is rotated 180 degrees so that piston 90 is at bottom dead center when piston 91 is at top dead center. This configuration of the pump results from the eccentric elements 108 and 109 being mounted to the drive shaft 114 so that the through bores 112 and 113 in positions opposite 180 degrees with respect to their pistons. For example, the through bore 112 would be at a 12 o'clock position (toward the piston head) and the through bore 113 would be at a 6 o'clock position.”

Thus, as is clear from this description of paragraph [0051], the center of gravity of the two pistons and the main shaft axis, although they can “during at least portions of the cycle” be located on a single straight line, a center of gravity of the balancing weight (i.e. the second piston) of Leu et al. is not always located at a position substantially opposite to the eccentric section axis with respect to the main shaft axis but deviated, in a rotating direction of the main shaft, from a location exactly opposite to the eccentric section axis with respect to the main shaft axis, during reciprocation of the piston, as required by claim 5.

Thus, in view of the above clear distinctions between present invention as now defined by

claim 5 and the Leu et al. configuration when combined with Oshima et al., it is submitted that a combination of Oshima et al. and Leu et al. clearly does not result in or otherwise render obvious the present invention of claim 5.

The Examiner cited the Musso et al. patent teaching particular refrigerant gases, and cited the Hayashi et al. patent for teaching a control apparatus for a compressor, but these tertiary references provide no teaching or suggestion that would have obviated the above-discussed shortcomings of the Oshima et al. and Leu et al. references. Therefore, it is respectfully submitted that claim 5, as well as claims 6-10 which depend there from, are clearly allowable over the prior art of record.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is earnestly solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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